Battermann
Geotechnical
Consulting
PLLC

February 2, 2015
Project No. 14049

Ms. Leslie Lee
P.O. Box 2422
Woodinville, WA 98072

Subject: Geotechnical Evaluation
70xx NE 132nd Street
Kirkland, Washington

On September 30, 2014, we provided a letter that evaluated three potential access routes to the planned new house location for the subject property. We understand that the most efficient route is off of a private drive that owners will not allow access to. The second best alternative is the route of the old access drive and/or road route that ran through the property and there are still remnants of onsite. The undersigned was requested to evaluate the stability of the slopes along the planned driveway alignment.

The new driveway will head northeast from the existing end of NE 130th Place following the existing old roadway up the slope. The initial traverse across the wetland buffer will not require any cuts or fills other than re-establishing the road-bed. The road cuts through here were established a long time ago and have naturally re-vegetated themselves. The slope to the north of the driveway alignment is comprised of Vashon lodgement till sediments. The 40 to 60 foot high slope was at a 40 to 50 percent inclination which is normal for a recessional cut headslope for a drainage established during the retreat of the ice sheet after the last glaciation of this area. The glacial till slope is dense and not typically subject to large rotational failures. The typical failure mode would be a shallow debris flow involving the outer 3 to 4 feet of weathered slope material. The slope length is not long enough or steep enough to promote common occurrences of debris flow failures. We saw no evidence of recent slope failures or debris flow deposits. And, with the existing old road-cut into the toe of the slope, if a debris flow was likely to occur, it already would have. The slopes are steep but not un-commonly steep, and there isn't a large tributary drainage basing directing runoff onto the slope. Much of the upslope runoff is now collected and routed to the HDPE pipe that forms the headwater of the wetland/creek located at the bottom of the slope.

It is our opinion that the driveway may be installed along the old roadway alignment without having an impact on the existing slope or on the wetland. If you have questions or require additional geotechnical engineering services, please contact BGC, pllc at (425) 273-5062.

Sincerely
Battermann Geotechnical Consulting, pllc
Jamey S. Battermann, PE, LG

BGC, pllc 14267 209th Avenue NE, Woodinville, WA 98077 (425) 273-5062